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GEOGRAPHICAL RECORD.

NORTH AMERICA.

THE SURVEY FOR THE GEORGIAN BAY SHIP CANAL.—The Canadian government has decided to build this canal. The project of building a ship canal from French River Village, on Georgian Bay, to Montreal, has been discussed for years. The length of the canal will be 440 miles and will provide a deep waterway from the Great Lakes to the Atlantic *via* the St. Lawrence River. An enormous facility for transportating very cheaply to Europe the grain of the Canadian west, will thus be provided. It is believed, in fact, that the route will attract much of our own wheat exports from Minnesota and North Dakota, as providing a line of least resistance to the seaboard.

The proposed canal is to follow the French and Ottawa rivers to Montreal. The Engineering Board of the Ministry of Public Works began, in 1904, to make surveys and investigations regarding the feasibility and probable cost of the proposed waterway. Its voluminous report, submitted in January last, fills a volume of 600 pages, covering the ground in great detail and illustrated by many maps, plans and profiles, many of them in the volume and 56 others accompanying it. The main conclusion is that a 22-foot waterway can be established in ten years, for the largest lake boats, at a cost of $100,000,000, and that the annual maintainance will be approximately $900,000. Alternative routes for greater or less distances along the general line of the waterway are discussed and estimated upon.

THE CRUISE OF THE CARNEGIE.—The magnetic survey yacht, *Carnegie* sailed from St. John's, N. F., on Oct. 2, for Falmouth, England. Dr. Bauer was on board, but he will return from Falmouth to Washington. The *Carnegie* will leave Falmouth, under command of Mr. Wm. J. Peters, for Madeira and will return to New York, *via* Bermuda, in March.

SOUTH AND CENTRAL AMERICA.

GROWTH OF BUENOS AIRES.—The *Year-Book* of the City of Buenos Aires for 1908, issued in English (xxx and 366 pp.), shows that the population at the end of 1908 was 1,189,180, an increase of 59,894 over 1907, or a growth of 5.3 per cent. in a year, a rate that is not surpassed by any other city in the world. The principal factors in this growth were the excess of births over deaths and immigration. The birth-rate was high, compared with other large cities—34.31 per 1,000 inhabitants—and the death-rate was only 15.25 per 1,000 inhabitants. The birth-rate in London, for the same year, was 25.7 and in New York, 28.5. According to the *Year-Book,* only Chicago can boast of a more rapid growth than Buenos Aires, and is able to say that it has doubled its population within a shorter space of time.

THE GRAZING INDUSTRY IN PATAGONIA.—The grazing resources of Patagonia are now utilized to a very small extent, practically the only herds and flocks in the region being found along the eastern coast, where transportation facilities of a sort are offered; or in the Punta Arenas region north of the Strait of Magellan; or at the headwaters of some of the Patagonian streams, as the Chubut, and the Valley of the 15th October, where Welsh colonists reside, and whence cattle may be driven northward and westward over Andine passes into Chile.

As an indication of the increased development of the grazing industry in southern Patagonia may be mentioned the newly established Patagonian Meat Preserving Company in the territory of Santa Cruz. The importance of the enterprise is sufficiently indicated by the activities of this company in 1908-9, when were exported 3,300,000 pounds of tinned meat, 550,000 pounds of grease, 88,000 pounds of extract of meat, and 9,000 tins of tongues, the entire product of the company being sent to London.

A railway has been projected from Port Desire westward to Lake Buenos Aires and actual construction will soon begin. This will open up a wide belt of country and will greatly stimulate grazing and allied industries along the eastern foot of the Andes and in the richer mountain valley about Lake Buenos Aires. I. B.

THE NITRATE INDUSTRY IN CHILE.—The great nitrate combination, which for so many years had a complete monopoly of the whole business and fixed prices arbitrarily, was dissolved March 31, 1909, on account of the failure of some of the companies to adhere to the rules of the combination. It was claimed that the assignments of the directors of the amount of nitrate to be manufactured, were unfair to some companies whose works were operated cheaply because of better facilities. These companies insisted on a readjustment of the schedule on a different basis and, failing in their attempt, finally withdrew from the combination. Since this time, the nitrate business has been badly disturbed, and some of the works have even shut down on account of the decrease in the price of nitrate, which, in May, 1909, was quoted as low as $1.60 (gold) per quintal (101.42 lbs.), the price in the same month of 1907 having been $2.13. The Chilean government imposes an export tax of 56 cents per quintal, and is, consequently, deeply interested in the situation. About three-fourths of the revenue of the state is derived from this source. So serious has the condition of the market become, that there is a strong desire among the owners of the 145 works now in the country to agree upon some working basis which shall control the market and re-establish the old prices. I. B.

ARGENTINE ENTERPRISE.—Argentina has for some years been a serious competitor of the United States and Russia in the wheat markets of the world, an interesting phase of the competition being indicated by the fact that since 1903 Argentine flour has practically driven out United States flour from southern Brazil. Over 74 per cent. of all Brazil's imports of flour come from Argentina, while only 16 per cent. come from this country. In addition, practically all the flour milled in Brazil is from wheat imported from Argentina. With the extension and early completion of the railway westward across the Andes, we may look for larger exports of flour to Chile, and even to Peru, *via* west coast steamers. There is room for 200,000,000 people in Argentina, where but 5,000,000 live to-day, and with the increased utilization of the land, Argentina's influence must spread over the southern two-thirds of the continent and in many markets become the dominating influence.

Already Argentina is second only to Australia in the number of sheep and third with respect to the United States and Russia in the number of both cattle and horses. An extended drought in the southern part of the province of Buenos Aires has caused serious losses of live stock among small farmers, but the larger farmers, with vast tracts of alfalfa and many artesian wells, will be but little affected.

An interesting phase of industrial development in the River Plate region is the growing lack of labourers, due to the expansion of the lumber industry on the Paraná and Paraguay tributaries. Eight thousand to 10,000 men are now employed on the Paraná at Posadas for the up-river lumber business, but the wages are steadily increasing with increased difficulties in getting men. In the face of this condition, lumber is imported from the Gulf ports of the United States in growing quantities. Eight steamers have recently been chartered for the business and will ply between Mobile, New Orleans, etc., and ports on the Plate in Uruguay and Argentina. I. B.

AFRICA.

THE JUBA RIVER FORMS A NEW MOUTH.—According to a Reuter despatch from Rome, the Juba, which forms a part of the boundary between Italian Somaliland and British East Africa, has formed a new mouth, 450 yards in breadth. It has also developed a long lagoon, which, at small expense, may be converted into a serviceable harbour. Some months ago, a violent typhoon broke through the spit of land separating the lower river from the sea, and the combined action of the sea and the current produced this remarkable change in the geographical conditions at the river mouth.

Some way up the Juba, an interesting discovery is reported by Capt. Ferrari of the Italian service. The large river, Webi Shebeli, is still represented on the maps as losing itself in the marshes of the Ballis country, but it is now found to be an affluent of the Juba, into which it flows about 120 miles above the mouths of that river.

ASIA.

MR. ELLSWORTH HUNTINGTON'S LATEST TRAVELS IN ASIA.—Mr. Huntington returned home early in October, after a most profitable journey of eight months. About two months were spent in going and coming, and the remaining six in Asia. When he started, he planned to spend only about two months in Palestine and Syria, and the rest of the time in Asia Minor. After visiting the Dead Sea, however, and sailing about it in a canvas boat, he became so much interested in Palestine that he prolonged his stay there to four months. Starting from Jerusalem as a center, he and his assistant made expeditions in all directions into the wild border regions of the Syrian Desert, the Negeb or South Country, the Druze Mountains and the Leja with its volcanic flows. They also went as far as Palmyra and northern Syria. Finally, at the end of June they returned to Jerusalem to have a look at the country in the dry summer, as well as in the verdant spring. In this way it was possible to see not only Palestine itself, but also all the highly various types of surrounding country which have so profoundly influenced the history of the Jews. Throughout the journey, special attention was paid to climatic problems, and it was found that the phenomena of Palestine agree with those of Central Asia in a remarkable degree.

In early July, Mr. Huntington went up to Asia Minor by way of the Cilician Palin and the City of Adana, where the recent Armenian massacres took place. The months of July and August were devoted to a study of the lakes of Central Asia Minor. Their variety is astonishing, for half a dozen distinct types are found in close proximity. Part of the time was spent in the remarkably beautiful forested region which lies in the middle of the south side of Asia Minor. Here it was found that peculiar topographic conditions give rise to summer rains, and hence splendid forests lie close to regions so barren that the population cannot live solely by agriculture, but must depend upon flocks and practice nomadism.

On the way home from Turkey a flying visit was paid to Greece. A study of the alluvial deposits which cover the Olympian plain and from the midst of which old Olympia has been excavated, yielded surprising evidence of the manner in which the climatic history of Greece has been parallel to that of regions 2,000 or 3,000 miles farther east.

GERMAN EXPLORERS MURDERED IN WESTERN CHINA.—Dr. Brunhuber and Mr. Schmidtz, of Germany, went last year to the unknown middle course of the Salwin River, in China, a little east of Burma, for the purpose of surveying that part of the river and making ethnological studies among tribes, over whom, according to Mr. Davies, in his recent book on Yunnan, the Chinese Government has inadequate control. A letter from a missionary, published in the *Allgemeine Wissenschaftlichen Berichte* says that while the explorers with their Chinese servants were in camp on the bank of the Salwin, they were attacked by neighbouring villagers and both the white men were killed.

AUSTRALASIA AND OCEANIA.

NEW EXPLORATION OF THE KAISERIN AUGUSTA RIVER, GERMAN NEW GUINEA.—The *Geographical Journal* summarizes from the *Deutsches Kolonialblatt,* for Aug. 1, the results of Herr Full's ascent of this river for 200 miles from its mouth, in Nov., 1908. This great river was brought to light in 1886-7, but no further steps have been taken, till last year, to show its value as a commerce carrier and the resources of the region through which it flows. The explorer says that the mouth of the river is not obstructed by a bar, and is about a mile wide, and that the river is from 300 to 400 yards wide as far as the highest point reached. The lowest part of its course leads through a region of sago swamps and lagoons, but the banks are well marked, and only for a short stretch, about 40 miles from the coast, does it form a lake-like expanse with islands. The channel is in no way obstructed and, in the deepest part of it, maintains a depth of at least 50 feet throughout the entire section examined. Soundings were taken every ten minutes. The wide alluvial plain is broken, here and there, by wooded hills and the position of villages is marked by plantations of bread-fruit trees and groups of cocoa-palms. The natives were not hostile, but, above 55 miles from the mouth, they spoke a language unknown to the interpreters. Their houses are among the most imposing in German New Guinea, though their arts show little trace of outside influence. Their canoes are made of a single tree and can carry 15 men. They raise tobacco both for their own use and for trading purposes. The writer says that the river forms the natural means of access to the western interior of German New Guinea, and that the fertile lowlands are well adapted for the cultivation of tobacco and other tropical products. Climatic conditions, however, are not favourable to settlement and development is not likely to be rapid.

POLAR.

New British Antarctic Expedition.—The *Geographical Journal* announced, in October, that Captain R. F. Scott, leader of the British Antarctic expedition in 1902-3, is now prepared to complete the work that he began and that Lieut. Shackleton so successfully continued. The objects of the expedition are to reach the south pole and to complete the scientific exploration of the Ross Sea area. He proposes to establish two bases, one in McMurdo Sound, South Victoria Land, and one in King Edward VII Land. If a favourable spot for headquarters is found in King Edward VII Land, the larger force, equipped for the south pole sledge journey, may be landed there, while the smaller party will continue the observations in McMurdo Sound and its region. On the other hand, if the wintering spot in King Edward VII Land should prove unfavourable for southern exploration or its latitude greatly increase the distance to be traversed to the pole, a small party will be established there to carry out a scientific exploration of the region. The main force, in that event, will be landed at McMurdo Sound, and will attempt not only to make the journey to the pole, but also further to explore the mountainous land in a south-easterly direction and ascertain whether it is connected with King Edward VII Land, or whether it continues in the direction of Graham Land. The effort will be made to add substantially to the magnetic, meteorological and geological results of the earlier expeditions.

A later report says that Captain Scott has acquired for the expedition the *Terra Nova,* a bark-rigged whaler of 749 tons built in Scotland twenty-five years ago and of late years employed in sealing off the coast of Newfoundland. With a nominal horse-power of 140, she makes nearly nine knots, and has sailing qualities which specially fit her for the work in view.

She will leave the Thames in August, 1910, going to New Zealand, and is expected to start from there in December. Every person employed will be of British nationality, the age limits being 25 and 40. Lieut. Evans, Capt. Scott's first officer, gives the following explanation of the methods to be followed in making the final dash:

The party will consist of six men, including Scott and himself. They will work a series of relays, carefully arranging the question of food transport in view of a prolonged sojourn from the base. Three modes of transport are available, ponies, dogs and motor sledges, and it is on the last named that Capt. Scott seems inclined to place chief reliance. He has been experimenting on snow slopes in Norway with a motor shod with hardwood runners which are fixed in sections on endless bands in the same manner as in caterpillar traction engines, which have proved well adapted for negotiating rough ground, and he has every confidence that this novel plan of locomotion over glacier ice will prove an important factor in solving the problem of traction, which is the real problem of the south pole.

The officers and crew for the expedition have all been selected.

Amundsen's Next Expedition.—The *Bulletin* gave last year (Vol. 40, p. 751) details of Captain Amundsen's plans for putting Nansen's vessel, the *Fram,* into the ice of the Arctic Ocean north of Point Barrow, Alaska, in 1910, with the expectation of drifting for several years across the polar area. He has recently announced that he expects to set out on this drift about June 10, 1910.

DR. BRUCE'S LATEST WORK IN THE ARCTIC.—Dr. W. S. Bruce with his party, which left Leith, in July last, on the steam yacht *Conqueror,* has returned to Europe with all well on board, and reports that he has completed the survey of Prince Charles Foreland and made important geological and other investigations.

PROPOSED AIRSHIP EXPEDITION TO THE POLE.—It is contemplated, in Germany, to attempt to reach the north pole in a Zeppelin airship. The executive committee having the remarkable project in hand, held a meeting at Friedrichshaven, early in October, and it was decided that a preliminary expedition should be sent next summer to Spitzbergen to investigate the polar ice and determine the conditions affecting the management of airships in those regions. The committee laid great stress upon the importance of developing Zeppelin airships for long journeys, especially over the sea, for purposes of scientific investigation. Plans are to be prepared for the construction of a suitable airship to be ready early in 1911.

CLIMATOLOGY.

HISTORICAL CHANGES OF CLIMATE.—In the *Monthly Weather Review* for November 1908, Mr. Ellsworth Huntington has a discussion of "The Climate of the Historic Past," a subject to which he has paid much attention during recent years. This article gives a short systematic summary of the evidence which Huntington has gathered during his journeys in Asia, and in connection with his study of the literature of the subject. Those who wish to gain a general view of this interesting investigation will find the present article worth serious consideration. It summarizes what the author has already set forth in his "Pulse of Asia," and in numerous separate articles, which have appeared in the *Bulletin* and elsewhere.

Huntington's view, in brief, is that there have been changes of climate during historic times, the characteristics of which were intermediate between those of the glacial period and those which now occur within the limits of contemporary observation. At the dawn of human history the climates of most of Asia, and apparently of all continental regions between the 20th and 50th parallels, seem to have been decidedly moister, and, presumably, cooler, than at present. The change from the climates of that time to the warmer and drier conditions of the present, apparently took place irregularly in a pulsatory fashion. The slow swing from the cold, moist climate of the last glacial epoch to the warm, dry climate of the present post-glacial epoch is as yet scarcely complete.

A review of certain observations on the Zuni ruins of New Mexico; of the apparent decrease in the size of Lake Tezcuco; of the evidence based upon the Inca terraces near Lima, and of reports contained in the writings of Darwin, and later of Moreno and others, leads Huntington to the conclusion that the climatic histories of the Old World and of the New World have been essentially the same. On the whole, there seems to have been, within historical times, an increasing degree of warmth and aridity. As to the cause, the suggestion is that this is probably to be found in variations in the intensity of solar radiation, during long periods.

It may be noted, by way of comment on this recent discussion of Huntington's, that meteorologists are very clear about one fact, and that is that within the period during which meteorological records have been kept there has been no appreciable change of climate. This period is, however, relatively only a very short one. Evidence of a tendency towards a drier and a warmer period occurring within historical times, such as has been adduced by Huntington as a result of his work in Asia, is not, it must be remembered, necessarily evidence in favour of a permanent, progressive change. There is much confusion in the use of the word change of climate. What is often spoken of as a change may simply be a long period oscillation. There is obviously a difference between a permanent progressive change, and an oscillation. R. DeC. W.

SENSIBLE TEMPERATURES.—A discussion of sensible temperatures from the point of view of an experimental psychologist is found in a paper by Prof. E. B. Titchener, entitled "The Psychophysics of Climate," and published in the *American Journal of Psychology* for January, 1909. The author finds striking instances of what he calls "psychophysics by common sense" in the original suggestion of J. W. Osborne (1876) in his "Determination of Subjective Temperatures" (*Proc. A. A. A. S.,* 1876), and in recent papers by W. F. Tyler, dealing with the so-called "hythers," reference to which has been made in the *Bulletin.* Professor Titchener remarks that he would "like to see some of the younger generation of climatologists pass through the drill of the psychological laboratory," and "some student of experimental psychology take up the meteorological problem." A bibliography is appended, which will prove useful to those who wish to make a further study of this interesting subject, on the border-line between meteorology and psychology. In the *Bulletin,* Vol. XXXVI, No. 3, pp. 129-138, is a summary of the factors concerned in sensible temperatures, and a review of the work done up to the time of publication of that article, with a condensed bibliography.

R. DeC. W.

OBITUARY.

DR. GEORG VON NEUMAYER.—Dr. von Neumayer died at Neustadt-am Haardt on May 24 at the age of 82. His fame as a man of science was international and he had many friends in all lands. He directed the Deutsche Seewarte, the German Naval Observatory at Hamburg, from the day of its founding, in 1876, till he retired from active life in 1903. He was the founder and editor of the *Annalen der Hydrographie and maritimen Meteorologie,* was one of the foremost authorities in terrestrial magnetism and meteorology, was very influential in the promotion of polar research, especially antarctic, and wrote many scientific papers.

MAJOR ERNEST CAMBIER.—Major Cambier, who died in Belgium, in July last, aged 65, was prominent in African service for many years. From 1877 to 1884 he was connected with the International African Association, founded the station at Karema, on Lake Tanganyika, and was prominent in the work of pioneer development in East Africa. Later, he was in charge of the economic researches in the Congo Independent State, recommended the building of the railroad around the lower Congo rapids to Stanley Pool, and served for two years as inspector of the State, exercising the functions of Governor-General.

THE MARQUESS OF RIPON.—This British statesman died in July last, a few days before his 82nd birthday. He was one of the early presidents of the Royal Geographical Society, and it was in his honour that Speke named the falls, where the Nile has its outlet from Victoria Nyanza, Ripon Falls.